

Executive Summary

Deer and closely related species such as elk (*Cervus elaphus nelsoni*), moose (*Alces alces*), and caribou (*Rangifer tarandus*), scientifically classified as members of the Family *Cervidae* are collectively referred to as “Cervids.” While the general public commonly considers cervids wildlife, cervids raised in enclosures and cared for by humans (variously called “captive,” “privately-owned,”¹ or “farmed”) form a group distinct from free-ranging (i.e., “wild”) cervids. Management of these captive/privately-owned cervids (C/P-OC) presents a number of unique challenges and opportunities. Because C/P-OC management involves aspects relevant to both agriculture and resource conservation, both the Michigan Departments of Agriculture (MDA) and Natural Resources (MDNR) have responsibilities in C/P-OC regulation. Both agencies recognize the potential of diseases, specifically Chronic Wasting Disease and Bovine Tuberculosis, to negatively impact both privately owned livestock and wildlife in Michigan.

The term “Captive/Privately Owned Cervid Industry” refers to the collective body of enclosures. This industry is composed of 740 facilities located throughout the State, ranging in size from less than 1 acre to over 5,000 acres. Facilities are classified into 4 categories based on function: Hobby, Exhibition, Ranch, and Full Registration. While Hobby and Exhibition are self explanatory, Ranches provide shooting opportunities, and Full Registration facilities provide breeding stock, shooting stock, and sale of live animals for hobby and exhibition operations.

As a result of recommendations from the Michigan CWD Task Force and an Executive Order of the Governor, a risk-based audit of the state’s C/P-OC industry was carried out “not to be punitive, but to find any flaws or weaknesses in the current system that might lead to the entrance of CWD into Michigan’s captive and wild cervid herds.” With the cooperation of the MDA’s Animal Industry Division and C/P-OC producers around the state, the Law Enforcement and Wildlife Divisions of the MDNR audited 584 C/P-OC facilities throughout the state between June 15, 2004 and October 26, 2004, of which 506 were active operations. Auditors collected data on a variety of factors related to the risk of introduction and spread of CWD in the state, including number and types of cervids held, the places from which they were obtained, how they were identified, the types, heights and conditions of fences, and information about CWD testing and escapes.

During the period of the audit, audited facilities housed a total of 32,493 C/P-OC based on facility owner information. More than 30,000 (30,616 or 94.2%) of those animals were of species known or anticipated to be susceptible to CWD. The vast majority (25,976 or 84.8%) were white-tailed deer. Elk were second most abundant at 4,029 animals (13.2%), and 611 animals (2.0%) were red deer (*Cervus elaphus elaphus*). Full Registration facilities housed 13,840 (42.6%) C/P-OC while Ranches housed 18,394 (56.6%).

Overall, auditors determined that 37% of all C/P-OC facilities were not in compliance with current regulations at the time of the audit. The principal areas of deficiency related to the identification of animals, the rate of CWD testing, conditions of fences, and the rate and reporting of escaped animals.

In spite of the unique characteristics of CWD as a disease, many of the risks for its introduction and propagation identified during the course of this audit are recurring themes in the surveillance and control of other contagious diseases in other species. While many issues of note, both positive and negative, were found in these inspections of Michigan C/P-OC facilities, the following stand out as deserving comments and recommendations:

- Efforts to minimize the risks of introduction and propagation of CWD via C/P-OC in Michigan begin and end with individual animal identification. The current animal identification regulations are inadequate because they do not require facility owners to identify all C/P-OC or to identify them all in

¹ The terms used to refer to these animals differ between stakeholder groups. In Michigan, agricultural groups prefer the term “privately-owned cervids,” whereas natural resource groups more commonly recognize the term “captive cervids.” To avoid confusion of either group, for the purposes of this report they are referred to collectively as “captive/privately-owned cervids” (abbreviated C/P-OC).

a unique and uniform way. A system must be implemented that is mandatory, uniform across all facilities and classes, and that provides unique and visible identification to each individual by which the animal can be traced throughout its lifetime. All animals must be identified by 1 year of age, and the appropriate state agency must issue and administer the identification system. The identification must also be easily visible so that each and every animal is clearly identified as a C/P-OC in the event of escape. In calling for this requirement, we understand that identification of every animal may be very difficult for Ranch facilities because of their size and their inherently less intensive management and handling of the animals. Nonetheless, individual animal identification is so critical to minimizing and managing disease risk that facilities such as Ranches that cannot reliably and verifiably identify each and every individual should be subject to more stringent and vigorously enforced fencing and biosecurity regulations to ensure that unmarked animals do not leave the facility alive under any circumstances.

- Along with animal identification, CWD testing of Michigan C/P-OC, or more accurately, the lack of testing, was the greatest risk for introduction and propagation of the disease identified during this audit. In spite of a mandatory testing program for all C/P-OC over 16 months of age that die plus a representative percentage of culls, nearly 90% of the reported C/P-OC deaths were not tested for CWD. While some facilities have tested in good faith, nearly half of the audited Ranch and Full Registration facilities reported that they had submitted no CWD tests at all. Without adequate CWD testing, the introduction of CWD into the State's C/P-OC cannot be detected. More ominously, this same lack of testing means that we cannot rule out the possibility the disease is already here and currently propagating undetected. Steps have been taken jointly by MDA and MDNR to notify producers of testing requirements and provide information about sample submission (letter dated Nov 15, 2004).
- The lack of a specified protocol for de-commissioning or de-registering a C/P-OC facility is a risk for introduction and propagation of CWD. Audit teams found a number of facilities that wanted to leave the C/P-OC business but had little guidance from regulations on how to decommission. As a result, understandably frustrated facility owners may deal with the situation in a way they deem appropriate, which, at worst, could mean releasing their C/P-OC into the free-ranging cervid population. Appropriate regulations should be developed speedily, and those regulations should provide for an outreach/education program to inform and assist C/P-OC producers who wish to leave the business and get rid of their animals.
- Procedures to deal with facility abandonment, are conspicuously absent and critically needed. As an example, when inspectors visited a facility during the audit, fences were down, the C/P-OC were gone, and the owner had moved out of state. In such cases, given the currently inadequate regulatory provisions for individual animal identification and recordkeeping, there is no way to be sure what happened to the animals or verify the CWD risk those animals, or the land once used as a C/P-OC facility, pose to the free-ranging cervid population. Penalties for cases where an owner just "walks away" from a facility should be sufficiently severe to provide a strong deterrent for this unacceptable behavior.
- Another area of risk for CWD introduction and propagation for which both C/P-OC facilities and regulating state agencies bear some burden of responsibility is that of inadequate recordkeeping. To the credit of the C/P-OC industry, the vast majority of inspected facilities not only keep records, but the records they keep were judged to be in compliance with current regulations. However, the current regulations are not particularly stringent when viewed in the context of what is required of a recordkeeping system in order to minimize disease risks. For example, most of the records kept are on paper, and while they comply with current regulations, lack of simultaneous accessibility of these

records by the multiple parties necessary to ensure adequate disease surveillance presents an obvious risk. In addition to the issues discussed relative to animal identification, the State needs to reevaluate and improve the way it gathers and stores regulatory information from C/P-OC facilities so that the information is rapidly, efficiently, and widely accessible to multiple agencies and producers, and so that important data linkages are maintained. The development of an electronic data collection, archiving, and reporting system to aid compliance, enforcement, and disease risk assessment should be a high priority. Such a system is currently lacking, and its design, development, and implementation should involve both information technology and disease control specialists to ensure an adequate system is developed.

- These audit findings also revealed the risk of C/P-OC escapes. In spite of the fact that reporting of “releases” is mandatory in current regulations, it is clear not only that escapes occur but that they are rarely reported. Of 464 escapes reported to audit inspectors, only 8 releases were apparently reported to MDA. Twenty percent of Class IV and about 14% of Class III C/P-OC facilities experienced escapes, which is likely to be an underestimate. Adding to the risk is the fact that only half of the escaped C/P-OC from Ranches bore identification. Most escaped C/P-OC were reported to have been recovered, yet the time allowed for reporting and recovery under current regulations is sufficient to add substantial risk of CWD introduction even for recovered animals. The development of more stringent escape and recovery protocols, along with enforcement and stiffening of penalties for non-reporting, is critical. Consideration should be given to measures which would allow agencies to dictate the rapidity and conduct of recovery operations based on risk and automatically make unreported escaped C/P-OC public property and subject to immediate harvest. These protocols should include measures to explicitly provide authority to agencies to manage the harvest of non-native cervid species. The Natural Resources Commission approved regulations to allow harvest of escaped exotic Cervids in January 2005. The documentation by this audit of another practice, the intentional release of C/P-OC into the wild, is also both notable and deeply troubling.
- Uniform regulatory requirements for the composition and maintenance of perimeter fencing should be developed and enforced. Current regulations specify that fences be constructed only of woven wire, yet in practice, C/P-OC facilities use a variety of other materials that agencies consider to be in compliance with the standards. Some of these materials very likely are adequate. Updated regulations should include specific guidance such as (but not limited to) minimum gauge of wire, mesh size, and distance between posts. In addition, the revised regulations need to address the current problematic conflict in fencing standards, which both specify minimum fence heights by species, yet also specify that fences need to prevent the ingress and egress of any cervid species. We cannot overstate the crucial role of fences in minimizing the risks of CWD introduction and propagation. In spite of their similar appearances, C/P-OC and free-ranging cervids are separate populations from the standpoint of disease control, and the separation between those populations should be maintained at all times. Good fences not only protect free-ranging cervids from C/P-OC, but vice versa.
- Some summary mention of Ranch facilities is warranted because of their unique characteristics and the unique risks they hold for CWD introduction and propagation. This audit found that of the 4 facility classes, Ranches enclosed the largest number of CWD-susceptible C/P-OC (>18,000 statewide), imported the largest numbers of C/P-OC from out-of-state sources (including from CWD-positive states), had the largest percentage of animals lacking individual identification, had the lowest rate of CWD testing, and had the lowest rates of recovery and identification of escapees. In addition, Ranch facilities are located in areas with some of the highest free-ranging WTD densities in the state. If CWD were to infect C/P-OC that subsequently escape from one of these facilities, propagation of CWD in the surrounding free-ranging population would likely be rapid. We do not intend these remarks to stigmatize all Ranch facilities. Some of the best managed C/P-OC facilities in the state are Ranches. However, because of this combination of factors that increase CWD risks, serious

consideration should be given to making registration and fencing requirements for Ranches more stringent than those for other classes of C/P-OC facilities. This may help provide greater assurance that registered facilities will be well managed and economically self-sufficient, and capable of providing needed disease surveillance and management safeguards.

- An emerging issue with respect to the risks of CWD introduction and propagation is potential environmental contamination via the manure or carcasses of infected animals. This audit was able to gather some of the first information on the ways that C/P-OC facilities manage and dispose of these materials. This is an area where development of workable regulations should be an ongoing priority for both agriculture and natural resource agencies. While the attention paid to issues of carcass and manure management and disposal is likely to increase in the future because of recent research findings, agencies and the industry must also keep the place of these items in proper perspective within the context of the overall risks of CWD transmission. The available research and the current scientific opinions of preeminent CWD scientists agree that the highest risks for introduction and propagation of the disease are the movements of, and contact between, live animals. The role played by carcasses and manure from infected animals, while by no means negligible, is a distant second in terms of risk importance, with contamination of machinery and equipment an even more distant third. It is critical that disease control experts and policy makers keep this relative risk ranking in mind so that attention, as well as limited time and resources, are not diverted from the most important sources of CWD risk.
- Measures of the overall non-compliance of C/P-OC facilities (37% of C/P-OC facilities judged non-compliant by audit inspectors) essentially speak for themselves. While the validity and meaning of these measures can be debated, clearly an appreciable amount of non-compliance exists among C/P-OC facilities, and there is substantial room for improvement.

In many respects, identifying the need for improvements in the C/P-OC industry to minimize the risks of introduction and propagation of CWD, and even suggesting remedies, is the easy part of the process. Much more difficult is the task of finding and applying sufficient resources to make the remedies happen. Agencies and policy makers should harbor no illusions about the amount of funding, personnel, and time needed to ensure the implementation and enforcement of the measures suggested in this report. All will be sizeable, but such support will be necessary if Michigan is serious about minimizing disease risks. It is only fair to point out that many of the problems identified with respect to current C/P-OC regulations and their implementation may have been largely due to a failure to provide the money and expertise necessary to do the job properly. In the end, measures taken to prevent the introduction and spread of CWD to Michigan will benefit both free-ranging cervids and C/P-OC, and the methods devised to fund risk mitigation measures should reflect that fact.